Remarks

The Office Action mailed 15 February 2008 has been received and reviewed. No claims having been added, amended, or canceled herein, the pending claims are claims 1 and 3-34.

Reconsideration and withdrawal of the rejections are respectfully requested.

Rejection under 35 U.S.C. §102

Claims 1, 3-8, 11, 14-15, 17-22, and 25-34 stand rejected under 35 U.S.C. §102(b) as being anticipated by Neumann et al. (U.S. Patent No. 5,932,636). Applicants respectfully traverse the rejection.

Neumann et al. disclose "[a] process for preparing an aqueous synthetic resin dispersion comprising preparing an ionic resin (A) . . . in the presence of olefinically unsaturated monomers" (column 14, lines 5-11; i.e., claim 1). Ionic resin (A) may be "an ionic epoxy or epoxy-amine resin" (column 2, lines 64-65). Neumann et al. specifically disclose the preparation of an epoxy-amine adduct in the presence of styrene (column 12, lines 22-35). However, they fail to specifically disclose, among other things, combining an amine and an epoxy material ***in the presence of a reactive diluent***, wherein ***the reactive diluent comprises at least one methacrylate compound***, as recited in claim 1.

Thus, Applicants respectfully submit that independent claim 1 and dependent claims 3-8, 11, 14-15, 17-22, and 30-34 are not anticipated by Neumann et al. For similar reasons, Applicants respectfully submit that a coating composition prepared according to the method of claim 1 (e.g., claim 25) and methods of coating using a coating composition prepared according to the method of claim 1 (e.g., claims 26-29) are not anticipated by Neumann et al.

Reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) are respectfully requested.

Rejection under 35 U.S.C. §102/103

Claims 23 and 24 stand rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Neumann et al. (U.S. Patent No. 5,932,636). Applicants respectfully traverse the rejection.

Claims 23 and 24 depend directly or ultimately from claim 1. Applicants respectfully submit that claims 23 and 24 are not anticipated by Neumann et al. for at least the reasons discussed herein above for claim 1 not being anticipated by Neumann et al.

Further, Applicants respectfully submit that claims 23 and 24 are not obvious over Neumann et al. for at least the reason that Neumann et al. provide insufficient guidance for one of skill in the art to combine an amine and an epoxy material in the presence of a reactive diluent, wherein ***the reactive diluent is selected to include at least one methacrylate compound***.

First, Applicants respectfully submit that Neumann et al. do not clearly teach that the preference is for monomers ***already present during the synthesis of the amino-epoxy resin***, rather than for monomers added ***during the synthesis of the blocked isocyanate*** or added ***after the synthesis thereof***.

Further, Neumann et al. list as suitable unsaturated monomers five subgenera (e.g., vinyl monomers, aromatic vinyl compounds, vinyl ethers, vinyl esters, and esters of α,β-unsaturated acids), and the subgenera of α,β-unsaturated acids includes four species (e.g., acrylates, methacrylates, fumarates, and maleates). However, styrene is the only monomer actually used in the working examples (i.e., column 12, lines 22-35). Thus, Applicants respectfully submit that Neumann et al. provide insufficient guidance for one of skill in the art to select acrylate or methacrylate monomers from the myriad of listed potential monomers, and in fact provide absolutely no guidance for one of skill in the art to select ***methacrylate monomers*** over ***acrylate monomers***.

Indeed, Applicants discovered that "[p]referred reactive diluents include vinyl compounds, ***methacrylate*** compounds, and combinations thereof" (page 7, lines 7-8 of the present specification; emphasis added). Applicants further discovered that when combining an amine and

an epoxy material in the presence of a reactive diluent (e.g., claim 1), ***acrylate*** compounds are ***not preferred*** as reactive diluents, because acrylate monomers may be reactive in the presence of an amine and an epoxy material. Accordingly, the present specification makes clear that " 'reactive diluent' refers to monomers and/or oligomers that are substantially non-reactive with the epoxy material and/or amine under the conditions used to prepare the epoxy-amine material" (page 6, lines 29-31 of the present specification).

Thus, Neumann et al. fail to provide sufficient guidance for one of skill in the art to combine an amine and an epoxy material in the presence of a reactive diluent, wherein ***the reactive diluent is selected to include at least one methacrylate compound***. In view of the remarks presented herein above, Applicants respectfully submit that a *prima facie* case of obviousness for claims 23 and 24 being unpatentable over Neumann et al. has not been established.

Reconsideration and withdrawal of the rejection under 35 U.S.C. 102/103 are respectfully requested.

Rejections under 35 U.S.C. §103

Claims 9 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Neumann et al. (U.S. Patent No. 5,932,636). Applicants respectfully traverse the rejection.

Applicants respectfully submit that claims 9 and 10, which ultimately depend from claim 1, are not obvious over Neumann et al. for at least the reasons discussed herein above for the with respect to claims 23 and 24 (which also ultimately depend from claim 1). For at least this reason, Applicants respectfully submit that a *prima facie* case of obviousness for claims 9 and 10 being unpatentable over Neumann et al. has not been established.

Claims 1 and 3-34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bremser et al. (U.S. Patent No. 6,201,043). Applicants respectfully traverse the rejection.

Applicants respectfully submit that claims 1 and 3-34 are patentable over Bremser et al. for reasons similar to those discussed herein above with respect to claims 23 and 24.

Further, the Office Action admits that Bremser et al. fail to disclose all of the subject matter of claims 1 and 5: "Bremser et al. fail to disclose the step of: ***(1)*** combining an amine and an epoxy material *in the presence of* a reactive diluent comprising at least one methacrylate compound; ***(5)*** wherein the epoxy material is dissolved or dispersed in the reactive diluent. Rather, they introduce the reactive diluent after forming the epoxy-amine adduct." (Page 10, lines 12-15 of the Office Action mailed 15 February 2008; emphasis in original). Applicants agree.

Nonetheless, the Office Action alleges that "[i]t should be noted that the limitations of the instant invention represent a change in order of process steps. In light of this, it has been found that the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. It has also been found that the selection of any order of mixing ingredients is *prima facie* obvious in the absence of new or unexpected results - *see MPEP 2144.04 IV C.*" (Page 10, lines 16-20 of the Office Action mailed 15 February 2008). Applicants respectfully submit that combining an amine and an epoxy material ***in the presence of a reactive diluent*** can lead to results that are advantageous over ***introducing a reactive diluent after forming the epoxy-amine adduct***, for at least the following reasons.

Bremser et al. disclose aqueous dispersions "obtainable by polymerizing an ethylenically unsaturated monomer or a mixture of ethylenically unsaturated monmers [sic] in an aqueous solution of an at least partially protonated epoxide-amine adduct" (abstract). The epoxide-amine adduct is obtainable "by reacting (A) a glydicyl ether of a polyphenol that contains on statistical average at least one epoxide group in the molecule, or a mixture of such glycidyl ethers, (B) a polygycidyl ether of a polyol that contains on statistical average more than 1.0 epoxide groups in the molecule, or a mixture of such polyglycidyl ethers and (C) a compound that contains a primary amino group in the molecule, or a mixture of such compounds, to give the epoxide-amine adduct" (column 2, lines 47-56). "The reaction of components (A), (B) and (C) is preferably

carried out in an organic solvent such as, for example, ethylene glycol monobutyl ether or propylene glycol monobutyl ether" (column 4, lines 34-38; emphasis added). "[I]t is useful if the solids content of the epoxide-amine adduct solution or dispersion is in the range from 45 to 60%" (column 7, lines 58-60). Accordingly, working Example 4.1 of Bremser et al. uses substantial amounts of solvents (e.g., butyl glycol) in the preparation of the epoxide-amine adduct. As noted in the present specification, "[i]t is desirable to avoid the use of excess organic solvent in a coating method so that the environmental hazards of allowing organic solvent to evaporate into the atmosphere are minimized" (page 1, lines 28-32 of the present specification).

In contrast, the present claims recite combining an amine and an epoxy material ***in the presence of a reactive diluent comprising at least one methacrylate compound*** as a solution to solve the problem of using excess organic solvent. Specifically, the present application provides a method of preparing a coating composition that includes the steps of: combining an amine and an epoxy material in the presence of a reactive diluent comprising at least one methacrylate compound to provide a composition comprising an advanced molecular weight epoxy-amine material and a reactive diluent; making an aqueous dispersion of the composition; and polymerizing the reactive diluent to provide the coating composition (e.g., present claim 1). In preferred embodiments, combining the amine and the epoxy material in the presence of a reactive diluent can advantageously allow for the preparation of waterborne compositions that are substantially free of solvent and/or have low volatile organic compound (VOC) content (e.g., page 14, line 28 to page 15, line 12).

In view of the advantageous results discussed herein above, Applicants respectfully submit that a *prima facie* case of obviousness for claims 1, 3-24, and 30-34 being unpatentable over Bremser et al. has not been established. For similar reasons, Applicants respectfully submit that a *prima facie* case of obviousness for claim 25 (i.e., a coating composition prepared according to the method of claim 1) and claims 26-29 (i.e., methods of coating using a coating composition prepared according to claim 1) being unpatentable over Bremser et al. has not been established.

Claims 12, 13, and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Neumann et al. (U.S. Patent No. 5,932,636) in view of Bremser et al. (U.S. Patent No. 6,201,043).

Claims 12, 13, and 16 depend directly or ultimately from claim 1. The deficiencies of Neumann et al. with respect to claim 1 have been discussed herein above. For example, Neumann et al. fail to specifically disclose or suggest, among other things, combining an amine and an epoxy material in the presence of a reactive diluent, wherein the reactive diluent comprises at least one methacrylate compound, as recited in claim 1.

Because Bremser et al. also fail to teach or suggest combining an amine and an epoxy material in the presence of a reactive diluent, wherein the reactive diluent includes at least one methacrylate compound, Applicants respectfully submit that Bremser et al. fail to remedy the deficiencies of Neumann et al.

For at least this reason, Applicants respectfully submit that a *prima facie* case of obviousness for claims 12, 13, and 16 being unpatentable over Neumann et al. in view of Bremser et al. has not been established.

Reconsideration and withdrawal of the rejections under 35 U.S.C. 103(a) are respectfully requested.

Summary

It is respectfully submitted that all pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives at the telephone number listed below if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted
By
Mueting, Raasch & Gebhardt, P.A.
P.O. Box 581415
Minneapolis, MN 55458-1415
Phone: (612) 305-1220
Facsimile: (612) 305-1228
Customer Number 26813

May 15, 2008
Date

By: _____
Loren D. Albin
Reg. No. 37,763
Direct Dial (612) 305-1225

CERTIFICATE UNDER 37 CFR §1.8:
The undersigned hereby certifies that the paper(s), as described hereinabove, are being transmitted via the U.S. Patent and Trademark Office electronic filing system in accordance with 37 CFR §1.6(a)(4) to the Patent and Trademark Office addressed to the Commissioner for Patents, Mail Stop Amendment, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15th day of May, 2008.

By: _____
Name: Sandra Wyatt